

## CURRICULUM VITAE

### Proposed role in the project: Renewable Energy Expert

1. **Family name:** Nyman
2. **First names:** Christer
3. **Date of birth:** 30.04.1956
4. **Nationality:** Finnish
5. **Civil status:** Married
6. **Education: M. Sc (Physics)**

Institution Helsinki university /Physics	Degree(s) or Diploma(s) obtained:
1977 - 1983	M. Sc.

7. **Language skills:** Indicate competence on a scale of 1 to 5 (1 - excellent; 5 - basic)

Language	Reading	Speaking	Writing
Finnish	1	1	1
Swedish	1	1	1
English	1	2	1

8. **Membership of professional bodies:**

- Association of International Consultants (AIC)
- International Solar Energy Society (ISES)
- Finnish Solar Energy Association (ATY)

9. **Other skills:**

- Trainer computer skills, secondary school and adult trainees
- Installer of PV systems for
- Data analysis of photovoltaic (PV)-panels for Neste Advanced Power Systems( NAPS)
- Data analysis for Imatran Voima Oy (IVO) of the 30 kW photovoltaic power plant.
- Planning and realization of a new micro computer data collection and control system of the IVO 30 kW PV-power plant.
- Feasibility studies on PV at Seyshelles
- PV system design and tests for Sabik Oy.
- Data analysis for NAPS PV-house and PV test systems
- Solar Energy brochures for Finnish Solar Energy Association
- www-solar energy pages for Finnish Solar Energy Association
- Project managing of solar energy photovoltaic implementation for Yemen financed by World Bank.
- Solar energy guide in Finnish (book printed 2001+ www pages)
- Solar PV modules for light buoy in navigational aid study report(Swedish)
- Feasibility studies of PV in Tanzania
- EU project :RENEWCOLOGY : 2002-04 Solar Education materials for web
- Solar Energy for the Development of Rural Education and Health Infrastructure Facilities of Sri Lanka ; Appraisal team member 2005
- PV project evaluation team member, PV expert, South Africa 2006
- Scientific committee 17<sup>th</sup> European Photovoltaic Solar Energy Conference 2001
- Scientific committee 19<sup>th</sup> European Photovoltaic Solar Energy Conference 2004
- Scientific committee 20<sup>th</sup> European Photovoltaic Solar Energy Conference 2005
- Scientific committee 21<sup>th</sup> European Photovoltaic Solar Energy Conference 2006
- Scientific committee 22<sup>th</sup> European Photovoltaic Solar Energy Conference 2007
- Scientific committee 23<sup>th</sup> European Photovoltaic Solar Energy Conference 2008
- Scientific committee 24<sup>th</sup> European Photovoltaic Solar Energy Conference 2009

- PV gridconnected system for domestic home 2008
- *Solar technical association of Finland, chairman 1992 - 2002*
- *Finnish nature conservation fund, energy council 1993-*

#### **IT SKILLS**

- *European Computer Driving LicenceECDL*

#### **10. Present position: Chief Executive Officer Soleco ltd, IT consult**

#### **11. Years within the firm: 17**

**12. Key qualifications:** Mr. Nyman's university studies and long career as a researcher with solar cells and solar energy applications together with his knowledge of basic physics and energy has made him a highly qualified expert in solar energy, and his knowledge and skills have been successfully tested in different applications in Finland and around the world. He started his solar energy career in 1984 with research of basics in solar cells and solar energy solutions. The first project he was involved in was development of a data collection system for the first Finnish solar energy plant in the early 1990's. Over the years he has planned and designed also a number of different tasks for small solar energy solutions around Finland. Feasibility studies for photovoltaic (PV) application for a hotel in Seychelles in 1993 opened the international market. During 1998-1999 a pilot project was carried out with different PV applications (schools and healthcare) in Yemen, financed by World Bank. Another international project was a feasibility study for PV systems for health centres in Tanzania in 2001. Directly related to concessional credits Mr. Nyman was the solar energy expert in the appraisal team for development of rural education and health infrastructure facilities of Sri Lanka in 2005. He has also written a large amount of scientific articles for conferences, and as material of different projects. In 2006 a PV evaluation of 1000 school project in South Africa was carried out over 5 weeks, resulting in many valuable recommendations regarding RE projects. Today he is the most experienced independent solar energy consult in Finland. Year 2008 he was the project manager for the first finnish gridconnected PV system in a private household with feed in connection.

#### **13. Specific experience abroad:**

<b>Country</b>	<b>Date from - Date to; Description</b>
<b>Seyschelles</b>	March 1993, PV feasibility studies for hotel electrification, PV expert
<b>Yemen</b>	1998 –1999 3 weeks,different periods, PV solar energy feasibility study, Program manager. PV installtion of waterpump, and radio communication
<b>Tanzania</b>	2001 PV solar energy project preparation, Program manager
<b>Sri Lanka</b>	2005 appraisal studies for school and health care electrification, PV expert
<b>South Africa</b>	2006 PV project evaluation EU 1000 school electrification project, PV expert
<b>UAE</b>	2007 Project plan for PV installations in Dubai
<b>Namibia</b>	Rural electrification project, appraisal PV solar expert 2008 may, dec
<b>Nepal</b>	Review, assess and modify the Technical Specifications prepared by the PTF for the Institutional Solar PV systems for the Renewable Energy Project Nepal.

#### 14. Professional experience

Date from - Date to	Location	Company	Position	Description
1.10.1984 - 31.7.1991	Espoo, Finland	VTT. Technical research centre, Semiconductor laboratory	Researcher	Solar cell researcher for applications
1989-	Helsinki/Porvoo	Solar technical Association	Chairman/ Executive Officer	Solar energy education/information
07.1991 -	Porvoo, Finland	Soleco Ltd	CEO, consultant	Solar Energy consultant

#### 15. Other relevant information (e.g., Publications)

- C. Nyman, Eureka project EU333, Alpsolar, Progress Report 1992, performance data of IVO 30 kW PV power plant.
- C.Nyman, Photovoltaic activities in Finland, Proc.12th E.C. European Photovoltaic Solar Energy Conference; Amsterdam, The Netherlands, April 1994.
- Wilk H., Szeless A., Beck A. Meier H., Heikkilä M., **Nyman C.**, Field testing and Optimisation of Photovoltaic Solar Power Plant Equipment, Proc.12th E.C. European Photovoltaic Solar Energy Conference, Amsterdam, The Netherlands, April 1994
- C. Nyman, Photovoltaic at Nordic Latitudes in Finland, CADDET Renewable News Letter, Oct 1994.
- C. Nyman, N.Argaw, Simulation and measurement of water pumping systems in Ethiopia, 13th European Photovoltaic Solar Energy Conference, Nice, France, October 1995
- C. Nyman, L. Mansner, Photovoltaic navigational aid system for multipurpose use, 13th European Photovoltaic Solar Energy Conference, Nice, France, October 1995
- C. Nyman, Photovoltaics in Finland, 14th European Photovoltaic Solar Energy Conference, Barcelona, Spain, July 1997
- C. Nyman, Ageing of photovoltaics, 14th European Photovoltaic Solar Energy Conference, Barcelona, Spain, July 1997
- C. Nyman, Ageing of photovoltaics, 2<sup>nd</sup> World Conference on Photovoltaic Solar Energy Conversion, Vienna, Austria, July 1998.
- C.Nyman, First experience of water pumping system in Yemen, 16<sup>th</sup> European Photovoltaic Solar Energy Conference, Glasgow,UK, May 2000
- C.Nyman, First experience of water pumping system in Yemen, EuroSun2000 ISES-Europe, Third ISES –Europe Solar Congress, Copenhagen, Denmark, June 2000.
- C. Nyman, The potential of using PV in Yemen, 17<sup>th</sup> European Photovoltaic Solar Energy Conference, Munich, Germany, October 2001
- C. Nyman, H. Tikkanen, Implementation of PV in Tanzania, PV in Europe, Rome, Italy, October 2002
- C.Nyman, PV basic materials for education RENEWCOLOGY, EU Leonardo project <http://www.renewcology.nu/>
- C. Nyman, World largest village electrification for the Development of Rural Education and Health Infrastructure Facilities of Sri Lanka, 22<sup>th</sup> European Photovoltaic Solar Energy Conference, Milano, Italy, September 2007
- C. Nyman, Solar Energy for the Development of Rural Education and Health Infrastructure Facilities of Sri Lanka, 22<sup>th</sup> European Photovoltaic Solar Energy Conference, Milano, Italy, September 2007
- C. Nyman, Lessons learnt of of EU 1000 school programme1999-2002 in South Africa, 22<sup>th</sup> European Photovoltaic Solar Energy Conference, Milano, Italy, September 2007